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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,327	12/03/2001	Satoru Tomekawa	56937-043	5544

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EXAMINER	
LEWIS, MONICA	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,327	TOMEKAWA ET AL.	
	Examin r	Art Unit	
	Monica Lewis	2822	

-- The MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *10-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This action is in response to the amendment filed June 13, 2003.

Response to Arguments

2. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. The indicated allowability of claims 3 and 9 are withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 1, 2, 4-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as obvious over Sasaoka et al. (U.S. Patent No. 6,010,769).

In regards to claim 1, Sasaoka et al. ("Sasaoka") discloses the following:

a) an insulating base (11b) (For Example: See Figure 1);

b) wiring layers (12 and 13) provided disposed on said insulating base (For Example: See Figure 1); and

c) a conductor (14) provided disposed inside said insulating base to electrically connect between said wiring layers in an interlayer of said insulating base (For Example: See Figure 1).

In regards to claim 1, Sasaoka fails to disclose the following:

a) a bonding strength between said wiring layers and said conductor is greater than a bonding strength between said wiring layers and said insulating base.

Although, Sasaoka fails to specifically state that the limitations listed above, the same materials are utilized therefore they would have the same characteristics (For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

Finally, it is inherent that the bonding strength between the wiring layers and conductors would be greater than the bonding strength between said wiring layers (For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

In regards to claim 2, Sasaoka discloses the following:

a) conductor contains a resin composition (For Example: See Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-23).

In regards to claim 2, Sasaoka fails to disclose the following:

a) glass transition temperature of the resin composition is set lower than a glass transition temperature of a resin composition contained in said insulating base.

Although, Sasaoka fails to specifically state that the limitations listed above, the same materials are utilized therefore they would have the same characteristics (For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

In regards to claim 4, Sasaoka fails to disclose the following:

a) the bonding strength between said wiring layers and said conductor is greater than the bonding strength between said wiring layers and said insulating base in an area of the wiring layer adjacent said conductor.

Although, Sasaoka fails to specifically state that the limitations listed above, the same materials are utilized therefore they would have the same characteristics (For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

Finally, it is inherent that the bonding strength between the wiring layers and conductors would be greater than the bonding strength between said wiring layers(For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

In regards to claim 5, Sasaoka discloses the following:

a) metal cohesion is applied between said conductor and said wiring layers (For Example: See Figure 1).

In regards to claim 6, Sasaoka discloses the following:

a) a non-bonding region is provided at a part of a bonding site between said wiring layers and said insulating base adjacent said conductor (For Example: See Figure 1).

In regards to claim 8, Sasaoka discloses the following:

a) a surface irregularity formed between said conductor and said wiring layers (For Example: See Figure 1).

In regards to claim 9, Sasaoka discloses the following:

a) an insulating base (For Example: See Figure 1); and

b) a conductor provided inside said insulating base to electrically connect to an interlayer of said insulating base (For Example: See Figure 1).

In regards to claim 9, Sasaoka fails to disclose the following:

a) a tensile strength of said conductor is greater than a bonding strength between said insulating base on a wall surface of said conductor.

Although, Sasaoka fails to specifically state that the limitations listed above, the same materials are utilized therefore they would have the same characteristics (For Example: See Figure 1, Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

Finally, it is inherent that the tensile strength of the conductor is greater than a bonding strength between said conductor and said insulating base on a wall surface of said conductor (For Example: See Figure 1 and Column 15 Lines 15-67, Column 16 Lines 1-57, Column 21 Lines 18-67 and Column 22 Lines 1-20).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Sasaoka et al. (U.S. Patent No. 6,010,769) in view of Hayashi et al. (U.S. Patent No. 6,143,116).

In regards to claim 3, Sasaoka discloses the following:

a) insulating base and said conductor contain a thermosetting epoxy resin composition (For Example: See Column 15 Lines 15-67, Column 16 Lines 1-57 and Column 21 Lines 18-67).

In regards to claim 3, Sasaoka fails to disclose the following:

a) the volume content of the thermosetting epoxy resin in said conductor is set larger than a volume content of the thermosetting epoxy resin in said insulating base.

However, Hayashi discloses the volume content of the resin in the conductor is larger than the content in the insulating base (For Example: See Column 5 Lines 1-67, Column 2 Lines 1-67 and Column 9 Lines 4-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Sasaoka to include the volume content of the resin in the conductor is larger than the content in the insulating base as disclosed in Hayashi because it aids in providing a highly reliable connection (For Example: See Abstract).

Additionally, since Sasaoka and Hayashi are both from the same field of endeavor, the purpose disclosed by Hayashi would have been recognized in the pertinent art of Sasaoka.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over Sasaoka et al. (U.S. Patent No. 6,010,769) in view of Sugizaki (Japanese Patent No. JP09036152A).

In regards to claim 7, Sasaoka fails to disclose the following:

a) a region containing an uncured resin component at a bonding site between said wiring layers and said insulating base adjacent said conductor.

However, Sugizaki discloses uncured resin (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Sasaoka to include uncured resin as disclosed in Sugizaki because it aids in reducing the deformity of wire (For Example: See Abstract).

Additionally, since Sasaoka and Sugizaki are both from the same field of endeavor, the purpose disclosed by Sugizaki would have been recognized in the pertinent art of Sasaoka.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 703-305-3743. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML
August 23, 2003

AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
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